

AMENDMENTS TO THE CLAIMS

Listing of Claims:

1. (Currently amended) A transgenic plant cell comprising an Oxidoreductase Stress-Related Protein (ORSRP) coding nucleic acid, wherein the nucleic acid comprises the a nucleotide sequence ~~as set forth in SEQ ID NO: 3 or a homolog thereof, wherein the homolog encodes~~ encoding a protein having an amino acid sequence with at least 80% 95% identity with the sequence as set forth in SEQ ID NO: 4, wherein expression of said nucleic acid in the plant cell results in increased tolerance to an environmental stress associated with salinity, drought, and/or low temperature, ~~metal, chemical, pathogenic and/or oxidative stresses~~ as compared to a non-transgenic wild type plant cell of the same species, and wherein the ORSRP is a heat-stable glutaredoxin or thioredoxin protein.

2-4. (Canceled)

5. (Currently amended) The transgenic plant cell of claim 1, wherein the ~~homolog encodes a protein having an amino acid sequence with at least 90% identity~~ ORSRP coding nucleic acid encodes a protein with the sequence as set forth in SEQ ID NO: 4.

6-7. (Canceled)

8. (Previously presented) The transgenic plant cell of claim 1 wherein the plant cell is derived from a monocotyledonous plant.

9. (Previously presented) The transgenic plant cell of claim 1 wherein the plant cell is derived from a dicotyledonous plant.

10. (Previously presented) The transgenic plant cell of claim 1, wherein the plant cell is derived from a plant selected from the group consisting of maize, wheat, rye, oat, triticale, rice, barley, soybean, peanut, cotton, rapeseed, canola, manihot, pepper, sunflower, borage, safflower, linseed, primrose, rapeseed, turnip rape, tagetes, solanaceous plants, potato, tobacco, eggplant, tomato, Vicia species, pea, alfalfa, coffee, cacao, tea, Salix species, oil palm, coconut, perennial grass, forage crops and Arabidopsis thaliana.

11. (Previously presented) The transgenic plant cell of claim 1 wherein the plant cell is derived from a gymnosperm plant.

12. (Canceled)
13. (Previously presented) A transgenic plant comprising the plant cell according to claim 1, wherein the transgenic plant is a monocot or dicot plant.
14. (Canceled)
15. (Previously presented) A transgenic plant comprising the plant cell according to claim 1, wherein the transgenic plant is a gymnosperm plant.
- 16-17. (Canceled)
18. (Currently amended) A plant expression cassette comprising an ORSRP coding nucleic acid having ~~the a nucleotide sequence as set forth in SEQ ID NO: 3 or a homolog thereof~~ operatively linked to a regulatory sequence and/or a targeting sequence for directing the ORSRP coding nucleic acid to an appropriate cell compartment, wherein the ~~homolog nucleotide sequence~~ encodes a protein having an amino acid sequence with at least 80% 95% identity with the sequence as set forth in SEQ ID NO: 4 and having the activity of an ORSRP.
19. (Currently amended) An expression vector comprising an ORSRP encoding nucleic acid having ~~the a nucleotide sequence as set forth in SEQ ID NO: 3 or a homolog thereof, wherein the homolog encodes~~ encoding a protein having an amino acid sequence with at least 80% 95% identity with the sequence as set forth in SEQ ID NO: 4 and having the activity of an ORSRP, or the plant expression cassette of claim 18, whereby expression of the ORSRP coding nucleic acid in a host cell results in increased tolerance to environmental stress as compared to a wild type host cell.
- 20-28. (Canceled)
29. (Currently amended) A method of producing a transgenic plant comprising an ORSRP coding nucleic acid, wherein expression of the nucleic acid in the transgenic plant results in increased tolerance to environmental stress associated with salinity, drought, and/or low temperature, ~~metal, chemical, pathogenic and/or oxidative stresses~~ as compared to a non-transgenic wild type plant of the same species, comprising
- a) transforming a plant cell with an expression vector comprising the nucleic acid,

b) generating from the plant cell the transgenic plant with an increased tolerance to environmental stress as compared to a corresponding wild type plant,
wherein the nucleic acid comprises the a nucleotide sequence as set forth in SEQ ID NO: 3 or a homolog thereof, wherein the homolog encodes encoding a protein having an amino acid sequence with at least 80% 95% identity with the sequence as set forth in SEQ ID NO: 4, and wherein the ORSRP is a heat-stable glutaredoxin or thioredoxin protein.

30-31. (Canceled)

32. (Currently amended) The method of claim 29, wherein the ~~homolog encodes a protein having an amino acid sequence with at least 90% identity~~ ORSRP coding nucleic acid encodes a protein with the sequence as set forth in SEQ ID NO: 4.

33-46. (Canceled)

47. (Currently amended) A method for preparing a plant cell with increased tolerance to an environmental stress associated with salinity, drought, and/or low temperature, ~~metal, chemical, pathogen and/or oxidative stresses~~ comprising transforming the plant cell with an ORSRP coding nucleic acid comprising the a nucleotide sequence as set forth in SEQ ID NO: 3 or a homolog thereof, wherein the homolog encodes encoding a protein having an amino acid sequence with at least 80% 95% identity with the sequence as set forth in SEQ ID NO: 4 and having the activity of an ORSRP, and expressing the ORSRP coding nucleic acid in the plant cell.

48. (Canceled)

49. (Currently amended) A method for selection of plants with increased tolerance to an environmental stress associated with salinity, drought, and/or low temperature, ~~metal, chemical, pathogen and/or oxidative stresses~~ comprising utilizing a ORSRP coding nucleic acid comprising the a nucleotide sequence as set forth in SEQ ID NO: 3 or a homolog thereof, wherein the ~~homolog encodes~~ encoding a protein having an amino acid sequence with at least 80% 95% identity with the sequence as set forth in SEQ ID NO: 4 and having the activity of an ORSRP as a DNA marker, and selecting the plants with increased tolerance to an environmental stress associated with salinity, drought, and/or low temperature, ~~metal, chemical, pathogenic and/or oxidative stresses~~.

50. (Canceled)
